

CLAIMS

1. A set of a first liquid composition and a second liquid composition for printing, each of the liquid compositions comprising a functional substance, an amphiphilic block copolymer or graft copolymer having an organic acid group, and a liquid medium, wherein the organic acid groups of the copolymers are different in pKa, and the amphiphilic copolymer contained in the first liquid composition becomes viscous by pH change of the first liquid composition on contact with the second liquid composition different in pH from the first liquid composition.

2. The set of a first liquid composition and a second liquid composition according to claim 1, wherein the first liquid composition becomes viscous on contact with the second liquid composition by change of pH of the respective liquid compositions.

3. The set of a first liquid composition and a second liquid composition according to claim 1, wherein the amphiphilic polymer of the first liquid composition and the amphiphilic polymer of the second liquid composition have respectively an organic acid group or an organic acid salt group having a pKa different from each other by 0.3 or more, and the difference in pH between the first liquid composition and the second liquid composition is 0.3 or more.

4. The set of a first liquid composition and a second liquid composition according to claim 3, wherein the difference in pKa between the organic acids is not less than 2.

5 5. The set of a first liquid composition and a second liquid composition according to claim 1, wherein at least one of the organic acid group has a pKa of not more than 2.

10 6. The set of a first liquid composition and a second liquid composition according to claim 1, wherein the organic acid group is selected from benzoic acid groups, aliphatic dicarboxylic acid groups, aromatic dicarboxylic acid groups, halogen-substituted benzoic acid groups, and sulfonic acid
15 groups.

7. The set of a first liquid composition and a second liquid composition according to claim 1, wherein the amphiphilic polymer is a block copolymer having an alkenyl ether as a repeating monomer unit.

20 8. The set of a first liquid composition and a second liquid composition according to claim 1, wherein the functional substance is enclosed by the amphiphilic copolymer.

9. The set of a first liquid composition and a
25 second liquid composition according to claim 8, wherein the functional substance is a colorant.

10. A method for liquid application, comprising

step of bringing the liquid compositions of the set stated in claim 1 into contact on a medium.

11. An apparatus for liquid application,
comprising a liquid applying means for applying the
5 compositions of the set stated in claim 1 onto a
medium by energizing the respective liquid
compositions to bring the liquid compositions into
contact on the medium, and a driving means for
driving the liquid applying means.